

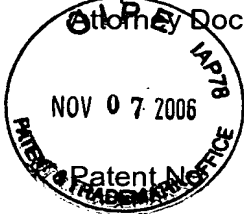
09/763822

COC

Patent No. 7,091,027

Request for Cert. of Correction dated November 2, 2006

Attorney Docket No. 0702-010272



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : 7,091,027 Confirmation No. 3747
 Inventor : Wallaart et al.
 Issued : August 15, 2006
 Title : Transgenic Amorpha-4,11-Diene Synthesis
 Examiner : Tekchand Saidha
 Customer No. : 28289

Certificate
 NOV 09 2006
of Correction

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT
FOR PTO MISTAKE (37 C.F.R. 1.322(a))

Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

ATTENTION: Decision and Certificate of Correction Branch
 Patent Issue Division

Sir:

In accordance with 35 U.S.C. §254, we attach hereto Form PTO/SB/44 and a copy of proof of PTO errors and request that a Certificate of Correction be issued in the above-identified patent. The following errors appear in the patent as printed:

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 8TH reference to Vergauwe, line 1, "*Agrobacterium iumefaciens*" should read -- "*Agrobacterium tumefaciens*" --
 (See the Information Disclosure Statement dated June 4, 2001, Form PTO-1449, sheet 2 of 3, reference AR, line 1.)

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 9th reference to Matsushita, line 2, "Farnesyl" should read -- "Farnesyl --"
 (See the Information Disclosure Statement dated June 4, 2001, Form PTO-1449, sheet 2 of 3, reference AS, line 1.)

Column 29, Line 27, Claim 1, "at least 70%" should read -- at least 95% --
 (See the Examiner's Amendment of 3/24/2006, page 2., Claim 43, Line 3)
 (Claim 43 issued as Claim 1.)

Column 29, Line 29, Claim 1, "or the complementary" should read -- or the full complementary --
 (See the Examiner's Amendment of 3/24/2006, page 2, Claim 43, Line 3.)
 (Claim 43 issued as Claim 1.)

Column 29, Line 29, Claim 2, "DNA sequence as encoding" should read -- DNA sequence encoding --
 (See the Examiner's Amendment of 3/24/2006, page 2, Claim 46, Line 1.)
 (Claim 46 issued as Claim 2.)

NOV 13 2006

Patent No. 7,091,027
Request for Cert. of Correction dated November 2, 2006
Attorney Docket No. 0702-010272

Column 29, Line 42, Claim 6, "A host cell" should read -- An isolated host cell --
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 50, Line 1.)
(Claim 50 issued as Claim 6.)


Column 30, Line 40, Claim 21, "A transgenic plant organism, comprising" should read
-- A transgenic plant, comprising --
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 65, Line 1).
(Claim 65 issued as Claim 21.)

Column 30, Line 42, Claim 22, "A transgenic cell," should read
-- An isolated transgenic cell, --
(See the Examiner's Amendment of 3/24/2006, page 2, Claim 75, Line 1.)
(Claim 75 issued as Claim 22.)

Respectfully submitted,

THE WEBB LAW FIRM

By


Barbara E. Johnson
Registration No. 31,198
Attorney for Registrants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219
Telephone: (412) 471-8815
Facsimile: (412) 471-4094

NOV 13 2006

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 7,091,027
APPLICATION NO. : 09/763,822
ISSUE DATE : August 15, 2006
INVENTORS : Wallaart et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 8TH reference to Vergauwe, line 1, "*Agrobacterium iumefaciens*" should read -- "*Agrobacterium tumefaciens*" --

Face of Patent, See Item (56) References Cited, OTHER PUBLICATIONS, 9th reference to Matsushita, line 2, "Farmesyl" should read -- "Farnesyl" --

Column 29, Line 27, Claim 1, "at least 70%" should read -- at least 95% --

Column 29, Line 29, Claim 1, "or the complementary" should read -- or the full complementary --

Column 29, Line 29, Claim 2, "DNA sequence as encoding" should read -- DNA sequence encoding --

Column 29, Line 42, Claim 6, "A host cell" should read -- An isolated host cell --

Column 30, Line 40, Claim 21, "A transgenic plant organism, comprising" should read -- A transgenic plant, comprising --

Column 30, Line 42, Claim 22, "A transgenic cell," should read -- An isolated transgenic cell, --

MAILING ADDRESS OF SENDER: The Webb Law Firm
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-2450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select Option

NOV 13 2008



PATENT APPLICATION
Serial No. 09/763,822
Atty. Docket No. 702-010272

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit Not Yet Assigned :
In re application of : **TRANSGENIC AMORPHA-4,**
11-DIENE SYNTHESIS
Thorvald Eelco WALLAART et al. :
Serial No. 09/763,822 :
Filed August 27, 1999 :

Pittsburgh, Pennsylvania
June 4, 2001

INFORMATION DISCLOSURE STATEMENT

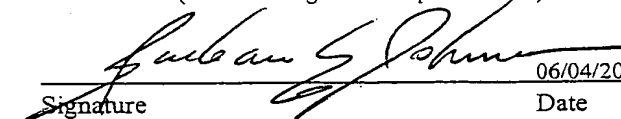
Commissioner for Patents
Washington, D.C. 20231

Sir:

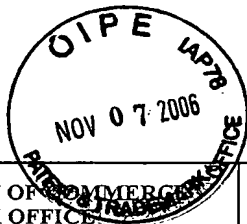
Pursuant to the requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant submits this Information Disclosure Statement which includes a completed Form PTO-1449. The references identified in Form PTO-1449 were cited in the International Search Report for the underlying PCT Application No. PCT/EP99/06302. Copies of the International Search Report and the references are enclosed.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231 on June 4, 2001.

Barbara E. Johnson, Registration No. 31,198
(Name of Registered Representative)


Signature Date 06/04/2001

NOV 13 2001

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
702-010272SERIAL NO.
09/763,822INFORMATION DISCLOSURE STATEMENT
STATEMENT BY APPLICANTAPPLICANT
Thorvald Eelco WALLAART et al.

(Use several sheets if necessary)

FILING DATE
August 27, 1999GROUP
Art Unit Not Yet Assigned

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AL							
	AM							
	AN							
	AO							
	AP							

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AQ	Wallaart, T.E. et al., "Bioconversion of Dihydroarteannuinic Acid into the New Antimalarial Drug Artemisinin", <u>Pharmacy</u> <u>World and Science</u> , Vol. 16, No. 3, P. C4, abstract, 1994
	AR	Vergauwe, A. et al., " <i>Agrobacterium tumefaciens</i> -mediated Transformation of <i>Artemisia annua</i> L. and Regeneration of Transgenic Plants", <u>Plant Cell Reports</u> , Vol. 15, No. 12, pp. 929-933, 1996
	AS	Matsushita, Y. et al., "Cloning and Analysis of a cDNA Encoding Farnesyl Diphosphate Synthase from <i>Artemisia annua</i> ", <u>Gene</u> , Vol. 172, No. 2, pp. 207-209, June 26, 1996

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

NOV 13 2006

Sheet 3 of 3FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
702-010272SERIAL NO.
09/763,822INFORMATION DISCLOSURE STATEMENT
STATEMENT BY APPLICANTAPPLICANT
Thorvald Eelco WALLAART et al.

(Use several sheets if necessary)

FILING DATE
August 27, 1999GROUP
Art Unit Not Yet Assigned

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AL							
	AM							
	AN							
	AO							
	AP							

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AQ	Brodellus, P., "Metabolic Engineering of Secondary Metabolism in Vanilla Planifolia and Artemisia annua", <u>Book of Abstracts</u> <u>211th ACS National Meeting</u> , abstract, March 24-28, 1996
	AR	Park, C. et al., "Expression, Secretion, and Processing of Rice alpha-Amylase in the Yeast <i>Yarrowia lipolytica</i> ", <u>Journal of</u> <u>Biological Chemistry</u> , Vol. 272, No. 11, pp. 6876-6881, 1997
	AS	Chang, C. et al., "Improvement of Heterologous Protein Prouctivity Using Recombinant <i>Yarrowia lipolytica</i> and Cyclic Fed- Batch Process Strategy", <u>Biotechnology and Bioengineering</u> , Vol. 59, No. 3, pp. 379-385, 1998

EXAMINER

DATE CONSIDERED

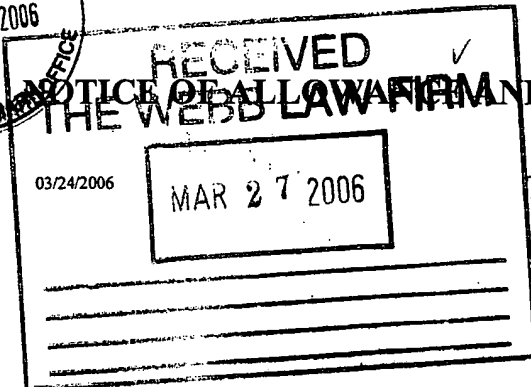
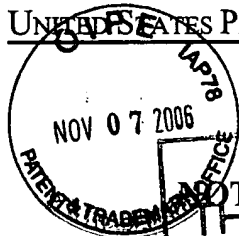
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

NOV 13 2006



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov



7590
Barbara E Johnson
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818

FEE(S) DUE

EXAMINER

SAIDHA, TEKCHAND

ART UNIT

PAPER NUMBER

1652

DATE MAILED: 03/24/2006

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,822	04/24/2001	Thorvald Eelco Wallaart	702-010272	3747

TITLE OF INVENTION: TRANSGENIC AMORPHA-4,11-DIENE SYNTHESIS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$0	\$1400	06/26/2006

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

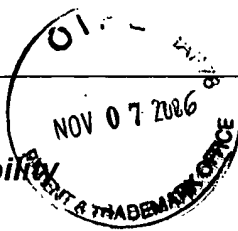
II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

NOV 13 2006

Notice of Allowability



Application No.

09/763,822

Examiner

Tekchand Saidha

Applicant(s)

WALLAART ET AL.

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 27 February 2006.
2. ☒ The allowed claim(s) is/are 43,46-65 and 75-84.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

NOV 13 2006

Art Unit: 1652

Notice of Allowability

1. Request for Continued Prosecution (RCE) under 37 CFR 1.114, filed on 27 February 2006, based on parent Application No. 09/763,822 is acceptable and a RCE has been established. An action on the RCE follows.
2. Applicants' amendment filed along with papers for RCE is also acknowledged.
3. Claims 43, 45-65, 69 and 71-86 are present in this application.
4. Claims ~~43~~, ~~46-65~~ & ~~75-84~~ are allowed, subject to the following Examiner's Amendment.
5. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gwen R. Wood on March 9, 2006.

Cancel claims 45, 69, 71-74 & 85-86 without prejudice.

Amend claims as follows:

- Claim ¹~~43~~, line 3, delete '70%' and replace with '95%'.
- Claim ¹~~43~~, line 3, after 'or the' insert 'full'.
- Claim ²~~46~~, line 1, after 'DNA sequence' delete 'as'.
- Claim ⁶~~50~~, line 1, delete 'A' before 'host cell', and replace with 'An isolated'.
- Claim ²¹~~65~~, line 1, after 'transgenic plant' delete 'organism'.
- Claim ²²~~75~~, line 1, delete 'A' before 'transgenic cell', and replace with 'An isolated'.
6. The following is an examiner's statement of reasons for allowance:

This Application provides novel nucleic acid sequence of SEQ ID NO: 13 encoding a synthase. Vectors, host cells and a process of producing the enzyme recombinantly are described.

NOV 13 2006

Art Unit: 1652

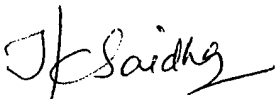
No prior art reference or sequence of record, however, taken alone or in combination teach the claimed invention or provide motivation to one of ordinary skill in the art to use the skills available in the area of enzymology or molecular biology, to make the invention obvious.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tekchand Saidha whose telephone number is (571) 272 0940. The examiner can normally be reached on 8.30 am - 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (571) 272 0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tekchand Saidha

Primary Examiner, Art Unit 1652

Recombinant Enzymes, E03A61 Remsen Bld.

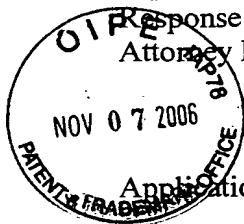
400 Dulany Street, Alexandria, VA 22314

Telephone : (571) 272-0940

March 9, 2006

NOV 13 2006

Application No. 09/763,822
Paper dated February 24, 2006
Response to Office Action dated September 30, 2005
Attorney Docket No. 0702-010272



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 09/763,822
Applicants : Thorvald Eelco Wallaart et al.
Filed : April 24, 2001
Title : TRANSGENIC AMORPHA-4, 11-DIENE
SYNTHESIS
Group Art Unit : 1652
Examiner : Tekchand Saidha
Confirmation No. : 3747 Customer No. 28289

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER FINAL

Sir:

In response to the Office Action, dated September 30, 2005, Applicants hereby submit the following amendments, along with a two-month Petition for Extension of Time.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

A Request for Continued Examination is filed concurrently herewith.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Commissioner for Patents, Alexandria, VA 22313-1450 on February 24, 2006.

Bruce L. White

(Name of Person Mailing Paper or Fee)

Bruce L. White

Signature

02/24/06

Date

NOV 13 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

1-42. (Cancelled)

E. Amend
43. (Previously Presented): An isolated DNA sequence encoding a polypeptide having the enzymatic activity of amorpha-4,11-diene synthase, wherein the DNA sequence exhibits at least 70% ^{95%} ~~homology~~ ^{full} to SEQ ID NO: 13 or the complementary strand thereof.

44. (Cancelled).

Cancelled by E. Amend.
45. (Previously Presented). ~~The DNA sequence [as] claimed in claim 43, which is at least 80% homologous to SEQ ID NO: 13.~~

E. Amend
46. (Currently Amended): The An isolated DNA sequence [as] claimed in claim 43, encoding a polypeptide having the enzymatic activity of amorpha-4,11-diene synthase which has the sequence of SEQ ID NO: 13.

47. (Previously Presented): The DNA sequence as claimed in claim ~~43~~, wherein the sequence has been isolated from plants producing amorpha-4,11-diene.

48. (Previously Presented): A method for producing amorphadiene synthase, comprising transforming or transfecting a host cell with the DNA sequence claimed in claim ~~43~~.

⁵
~~49.~~ (Previously Presented): A DNA construct comprising the DNA sequence as claimed in claim ~~43~~¹ operably linked to suitable transcription initiation and termination sequences.

Ex. Amend.
⁶
~~50.~~ (Currently Amended): ^{*An isolated*} [A] host cell comprising athe DNA sequence as claimed in claim ~~43~~¹.

⁷
~~51.~~ (Previously Presented): The host cell as claimed in claim ~~50~~⁶, wherein the cell is a bacterial cell.

⁸
~~52.~~ (Previously Presented): The host cell as claimed in claim ~~50~~⁶, wherein the cell is a plant cell.

⁹
~~53.~~ (Previously Presented): The host cell as claimed in claim ~~52~~⁸, wherein the cell is derived from a plant itself producing sesquiterpenes.

¹⁰
~~54.~~ (Previously Presented): The host cell as claimed in claim ~~50~~⁶, wherein the cell is a cell selected from the group consisting of *A. annua*, *V. oblongifolia* and *E. coli*.

¹¹
~~55.~~ (Previously Presented): The host cell as claimed in claim ~~53~~⁹, wherein the cell is derived from a plant selected from the group consisting of the genera *Carum*, *Cichorium*, *Daucus*, *Juniperus*, *Chamomilla*, *Lactuca*, *Pogostemon* and *Vetiveria*.

¹²
~~56.~~ (Previously Presented): The host cell as claimed in claim ~~52~~⁸, wherein the cell is derived from a plant, and wherein the biosynthesis of sesquiterpenoids can be elicited.

¹³
~~57.~~ (Previously Presented): The host cell as claimed in claim ~~56~~¹², wherein the cell is derived from a plant selected from the group consisting of the genera *Capsicum*, *Gossypium*, *Lycopersicon*, *Nicotiana*, *Phleum*, *Solanum* and *Ulmus*.

NOV 13 2006

¹⁴
58. (Previously Presented): The host cell as claimed in claim ⁸52, wherein the cell is derived from a plant selected from the group consisting of soybean, sunflower and rapeseed.

¹⁵
59. (Previously Presented): The host cell as claimed in claim ⁶50, wherein the cell is a yeast cell.

¹⁶
60. (Previously Presented): The host cell as claimed in claim ¹⁵59, wherein the yeast cell is a cell selected from the group consisting of *Saccharomyces cerevisiae* and *Pichia pastoris*.

¹⁷
61. (Previously Presented): The host cell as claimed in claim ¹⁵59, wherein the cell is an oleaginous yeast cell.

¹⁸
62. (Previously Presented): The host cell as claimed in claim ¹⁷61, wherein the oleaginous yeast cell is a *Yarrowia lipolytica* cell.

¹⁹
63. (Previously Presented): The host cell as claimed in claim ⁶50, which cell is part of a tissue or organism.

²⁰
64. (Currently Amended): A transgenic plant tissue, comprising at least the host cells cell as claimed in claim ⁶50.

²¹
65. (Currently Amended): A transgenic plant organism comprising at least the host cells cell as claimed in claim ⁶50.

66-68. (Cancelled).

69. (Withdrawn): A method of preparing amorphadiene, comprising the steps

of:

{W0249334.1}

a) transfecting or transforming a suitable host cell with a DNA sequence as claimed in claim 43 to obtain transgenic host cells;

b) expressing the said DNA sequence in the presence of farnesyl pyrophosphate (FPP) to form amorpha-4,11-diene; and

c) isolating the amorpha-4,11-diene thus formed,

wherein the expression level of the amorpha-4,11-diene synthase is higher in transgenic host cells, tissues or organisms harboring an endogenous version of the DNA sequence than in non-transgenic host cells, tissues or organisms.

70. (Cancelled).

71. (Withdrawn): A method of preparing artemisinin, comprising:

a) transfecting or transforming a suitable host cell, tissue or organism with a DNA sequence as claimed in claim 43 to obtain transgenic host cells, tissues or organisms;

b) expressing the said DNA sequence in the presence of farnesyl pyrophosphate (FPP); and

c) isolating the amorpha-4,11-diene thus formed,

wherein the transgenic host cells, tissues or organisms harbor the genetic information coding for the enzymes that further convert amorpha-4,11-diene to artemisinin and wherein the expression level of the amorpha-4,11-diene synthase is higher in transgenic host cells, tissues or organisms harboring an endogenous version of the DNA sequence than in non-transgenic host cells, tissues or organisms.

72. (Withdrawn): A source of artemisinin, comprising host cells, tissues or organisms harboring a DNA sequence as claimed in claim 43 and the genetic information coding for the enzymes that further convert amorpha-4,11-diene to artemisinin, which host cells, tissues or organisms have expressed the said DNA sequence.

73. (Withdrawn): The source as claimed in claim 72, wherein the cells are cells selected from the group consisting of bacterial cells, yeast cells or plant cells.

*Cancelled
per
Ex. Amend.*

74. (Withdrawn): The source ~~as~~ claimed in claim 72, wherein the cells are disrupted.

Ex. Amend
²²75. (Currently Amended): ^{*An isolated*} [A] ~~non-human~~ transgenic cell, tissue or organism harboring in its genome more copies of ~~the~~ DNA sequence as claimed in claim ~~43~~ than are present in a corresponding non-transgenic cell, tissue or organism.

²³76. (Previously Presented): The transgenic cell as claimed in claim ²²75, which cell is an *E. coli* cell.

²⁴77. (Previously Presented): The transgenic cell as claimed in claim ²²75, which cell is a *Saccharomyces cerevisiae* cell.

²⁵78. (Previously Presented): The transgenic cell as claimed in claim ²²75, which cell is a *Yarrowia lipolytica* cell.

²⁶79. (Previously Presented): The transgenic organism as claimed in claim ²²75, wherein the organism is a plant itself producing sesquiterpenes.

²⁷80. (Previously Presented): The transgenic organism as claimed in claim ²⁶79, wherein the organism is an organism selected from the group consisting of *A. annua* and *V. oblongifolia*.

²⁸81. (Previously Presented): The transgenic organism as claimed in claim ²⁶79, wherein the organism is a plant selected from the group consisting of the genera *Carum*, *Cichorium*, *Daucus*, *Juniperus*, *Chamomilla*, *Lactuca*, *Pogostemon* and *Vetiveria*.

Application No. 09/763,822
Paper dated February 24, 2006
Response to Office Action dated September 30, 2005
Attorney Docket No. 0702-010272

22 ⁽²⁹⁾ 82. (Previously Presented): The transgenic organism as claimed in claim 75, wherein the organism is a plant in which the biosynthesis of sesquiterpenoids can be induced by elicitation.

29 ⁽³⁰⁾ 83. (Previously Presented): The transgenic organism as claimed in claim 82, wherein the organism is a plant selected from the group consisting of the genera *Capsicum*, *Gossypium*, *Lycopersicon*, *Nicotiana*, *Phleum*, *Solanum* and *Ulmus*.

22 ⁽³¹⁾ 84. (Previously Presented): The transgenic organism as claimed in claim 75, wherein the organism is a plant selected from the group consisting of soybean, sunflower and rapeseed.

85. (Currently Amended): The DNA sequence as claimed in claim 44 ¹ ~~43~~, which is at least 90% homologous to SEQ ID NO: 13.

86. (Currently Amended): The DNA sequence as claimed in claim 44 ¹ ~~43~~, which is at least 95% homologous to SEQ ID NO: 13.

Application No. 09/763,822
Paper dated February 24, 2006
Response to Office Action dated September 30, 2005
Attorney Docket No. 0702-010272

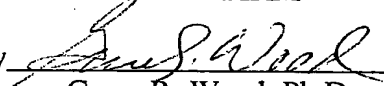
present invention, namely, DNA sequences which exhibit at least 70% homology to SEQ ID NO: 13.

Claims 75-84 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of written description. In the Office Action, it is asserted that the language "non-human" is not supported in the original disclosure and is requiring that this language be deleted from the claims. Claim 75 has been amended to delete the recitation "non-human."

In view of the foregoing amendments and remarks, it is respectfully submitted that all of the pending claims in the present application comply with the requirements of §§ 101 and 112. Accordingly, reconsideration and withdrawal of the rejection and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

THE WEBB, LAW FIRM

By 
Gwen R. Wood, Ph.D.
Registration No. 51,027
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
Telephone: 412-471-8815
Facsimile: 412-471-4094
E-mail: webblaw@webblaw.com